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Revision 1

Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

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Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

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Idaho Completion Project
Idaho Falls, Idaho 83415

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Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

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ABSTRACT

This report documents the closure of the Operable Unit 1-07B Groundwater Treatment Facility at Test Area North (TAN-1748) at the Idaho National Engineering and Environmental Laboratory. This activity began in November 2003 and was completed in June 2004. The primary objectives of this activity were to eliminate potential safety hazards and dismantle and dispose of the Groundwater Treatment Facility's process equipment, tanks, and piping. As required in the applicable Operable Unit 1-07B project documents, the treatment system was rinsed, disassembled, removed, and properly disposed of. The tent structure that housed the treatment system has been left intact to support other Idaho National Engineering and Environmental Laboratory activities. All waste streams generated during this activity have been properly profiled and disposed of.

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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D&D	decontamination and dismantlement
DEQ	(Idaho) Department of Environmental Quality
DOE	Department of Energy
DW	double-wall (piping)
EPA	Environmental Protection Agency
FTL	field team leader
GWTF	Groundwater Treatment Facility
ICDF	INEEL CERCLA Disposal Facility
ICP	Idaho Completion Project
INEEL	Idaho National Engineering and Environmental Laboratory
IWCP	Integrated Work Control Process
MCP	management control procedure
NPTF	New Pump and Treat Facility
OU	operable unit
PLN	plan
STD	standard
SW	single-wall (piping)
TAN	Test Area North
TCE	trichloroethene
TSF	Technical Support Facility
USC	*United States Code*
WO	work order

Closure Report for the Groundwater Treatment Facility, Test Area North, Operable Unit 1-07B

1. INTRODUCTION

This report documents the closure of the Operable Unit (OU) 1-07B Groundwater Treatment Facility (GWTF), located at Test Area North (TAN) Building 1749, at the Idaho National Engineering and Environmental Laboratory (INEEL). The facility has been decontaminated and all associated equipment has been dismantled and properly dispositioned. This report provides background related to the decision to discontinue GWTF operations (Section 2) and identifies the applicable Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC § 9601 et seq.) closure requirements (Section 3). The decontamination and dismantlement (D&D) activities that were conducted are summarized in Section 4, while final disposition of the waste is discussed in Section 5. Section 6 provides a description of the final site conditions, and Section 7 provides a statement of compliance with the applicable closure requirements.

2. BACKGROUND

The GWTF was put into service in February 1994 as an interim action. The primary objective of the system was to hydraulically contain the highest area of contamination near the historic Technical Support Facility (TSF) injection well (TSF-05). The interim action was referred to as OU 1-07A. The GWTF system was designed to extract water from TSF-05 and treat the contaminated groundwater at a rate of 50 gal/min (189 L/min). The GWTF used solids removal, air stripping, carbon adsorption, and ion exchange to treat the extracted groundwater for volatile organic compounds, radionuclides, and metals. Initially, the treated water was pumped to the TSF-07 evaporation pond for disposal. However, shortly after the start of operations, the system was modified so that the treated water was disposed of into a new injection well located within the TSF-05 source area (TAN-31 well). The GWTF, as well as a field laboratory, was housed in four sea-land containers enclosed in a membrane-covered Sprung® structure.

The *Record of Decision Declaration for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites Final Remedial Action, Operable Unit 1-07B Waste Area Group 1* (DOE-ID 1995) directed that pump-and-treat technology be used to restore the groundwater contaminant plume and that treatability studies be conducted concurrently to evaluate alternative treatment technologies. The final remedial action selected in the Record of Decision (DOE-ID 1995), referred to as OU 1-07B, consisted of three distinct phases, as follows:

1. Phase A—covered the transition of the OU 1-07A interim action to the OU 1-07B final remedial action

2. Phase B—consisted of hot spot containment and/or removal with treatability studies

3. Phase C—included dissolved-phase groundwater treatment with continuation of hot spot containment and/or removal.

The *New Pump and Treat Facility Remedial Action Work Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B* (DOE-ID 2003a) required that the GWTF (or an alternate treatment system) be operated until the treatability studies could be completed and the Department of Energy (DOE), Environmental Protection Agency (EPA), and Idaho Department of

Environmental Quality (DEQ) (hereinafter referred to as the Agencies) could make a final decision on the remedy for the "hot spot," (i.e., the area nearest the TSF-05 injection well contaminated at levels greater than 20,000 μg/L trichloroethene [TCE]).

In November 1998, the Air Stripper Treatment Unit was put into service at a location downgradient from the hot spot, which allowed the GWTF to be put into standby mode while the field evaluation of in situ bioremediation was conducted in the upgradient portion of the plume near TSF-05. The Air Stripper Treatment Unit was designed to be a temporary system and was later replaced by the New Pump and Treat Facility (NPTF). Based on the success of the field evaluation, the Record of Decision was eventually amended to specify in situ bioremediation, NPTF, and monitored natural attenuation as the final remedy components (DOE-ID 2001). In October 2002, all filters were removed from the GWTF and the system was flushed with potable water until TCE concentrations in the effluent fell below detection limits.[a] At that time, with agreement from the regulatory agencies (see Appendix D), regular inspections of the system were curtailed.[b]

3. REQUIREMENTS FOR DECONTAMINATION AND DISMANTLEMENT

The Remedial Action Work Plan (DOE-ID 2003a) included specific requirements for final D&D and closure of the treatment system at the time that it was no longer required. The Remedial Action Work Plan specified that the facilities built to remediate OU 1-07B (i.e., all tanks, containers, piping, and equipment) were to be flushed with clean water to remove as much contamination as possible. The system was to be dismantled and decontaminated for reuse or was to be properly disposed of. The Remedial Action Work Plan stated that the site was to be returned to its preoperational condition to the extent feasible considering cost and intended future use. Monitoring wells still in use were to be left operational. The Remedial Action Work Plan also required that a more detailed D&D plan be developed to direct the work activities. The subsequent *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility* (INEEL 2003) identified the tasks that were required to decontaminate and dismantle the GWTF. The project objectives of the D&D Plan were to:

- Eliminate potential safety hazards related to the GWTF equipment and components
- Remove the potential for exposure to hazardous and radioactive contaminants
- Package and dispose of all hazardous and radioactive waste located within the GWTF
- Remove the GWTF system, including all process piping, equipment, tanks, structures, and enclosures.

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a. K. E. Hain (DOE), letter to W. Pierre (EPA) and D. Nygard (DEQ), October 15, 2002, "Curtailment of Groundwater Treatment Facility Daily Inspections," EM-ER-02-173.

b. D. Nygard (DEQ), letter to K. Hain (DOE), October 23, 2002, "Curtailment of Groundwater Treatment Facility Daily Inspections," EM-ER-02-173.

4. SUMMARY OF DECONTAMINATION AND DISMANTLEMENT ACTIVITIES

Planning and design for the GWTF D&D project began in September 2003. Field operations at the GWTF began in October 2003 and were completed in June 2004. All activities were completed 1 month ahead of schedule, as identified in the D&D Plan (INEEL 2003). All work was performed in accordance with INEEL requirements and procedures, as outlined in the D&D Plan and in task-specific work orders prepared in compliance with INEEL work control requirements. In addition, safe work permits, job safety analyses, and radiological work permits were prepared to provide additional requirements and procedures for specific tasks. Project documentation (including the D&D Plan, hazard analysis, and the environmental checklist) was prepared and approved in accordance with the appropriate INEEL and Idaho Completion Project (ICP) procedures and policies.

All equipment was flushed, dismantled, and resized as necessary according to the Remedial Action Work Plan (DOE-ID 2003a) and D&D Plan (INEEL 2003). Interior mechanical and electrical equipment, lighting, fire protection and alarm systems, accessible utility piping and associated equipment, and process piping inside the cargo containers were removed and disposed of (Figure 1). The holding tanks and associated piping were sized for disposal. The 20,000-gal tank was cut in half (horizontally) and used as a container for sized tank pieces and other debris (Figure 2). The total cost for the GWTF D&D project was approximately $150,000. Appendix A provides a more detailed description of the D&D work activities.

Figure 1. Dismantlement and removal of process equipment.

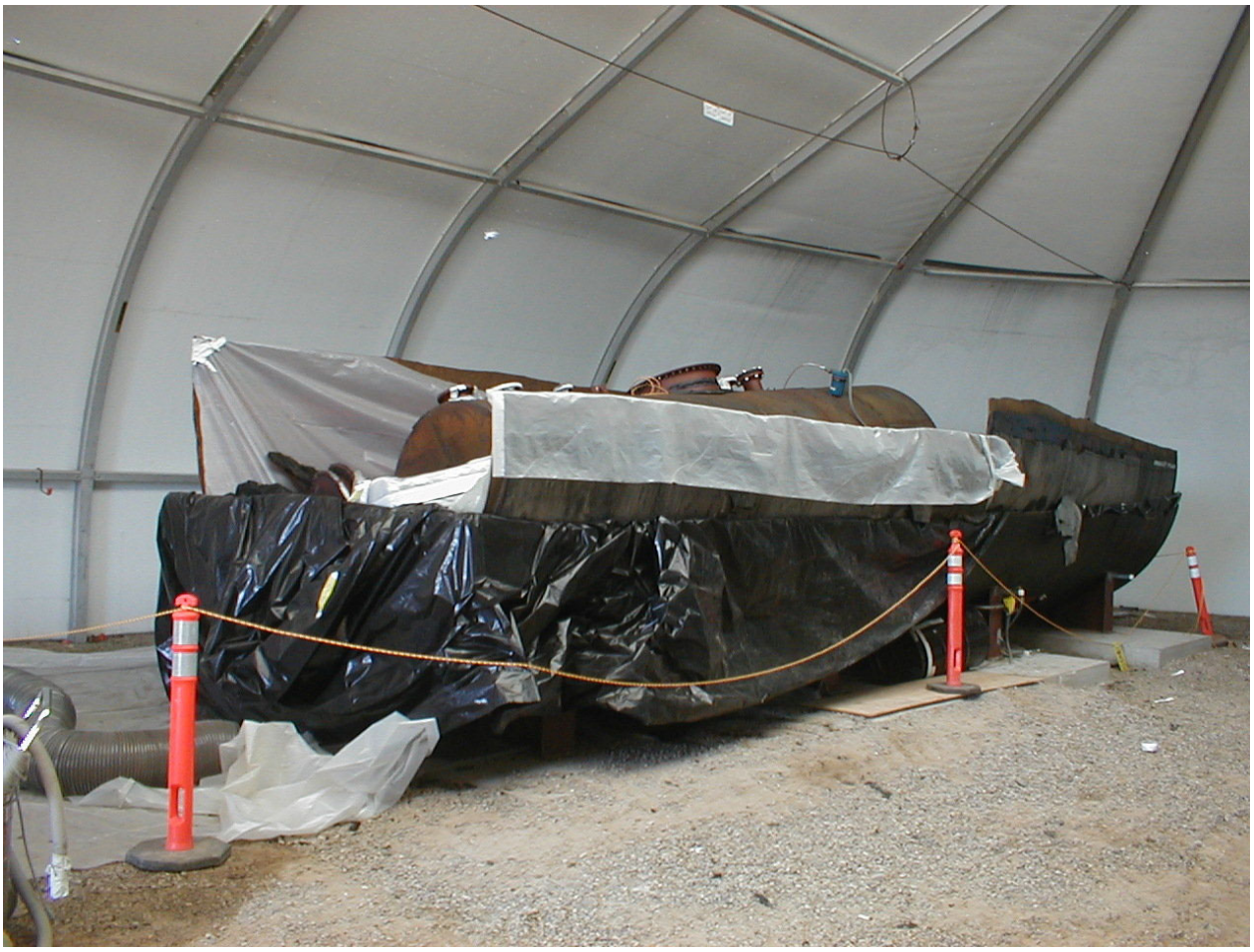

Figure 2. Waste debris temporarily stored in sized 20,000-gal holding tank.

During the project, personnel exposure to radiological and chemical hazards was minimized through the implementation of engineering and administrative controls, the use of personal protective equipment, and personnel monitoring. No exposures in excess of applicable permissible exposure and applicable action limits for any hazardous chemicals or materials resulted from the D&D operations. There were no recordable radiation exposures.

5. EQUIPMENT DISPOSITION

Equipment disposition involved characterizing, removing, packaging, and transporting all of the components and contents of the treatment system for appropriate disposal. Waste determination and disposition forms were prepared for all waste streams generated (Appendix B). The types of waste generated, their quantities, and final disposition are summarized in Table 1. The four generated waste streams included debris, sludge, resin, and water.

Table 1. Waste generated during Groundwater Treatment Facility decontamination and dismantlement activites.

Waste Type	Quantity	Disposition
Debris	130 yd^3	ICDF
Sludge and tank bottoms	320 gal	ICDF
Ion exchange resin	7 gal	ICDF
Water	1,300 gal[a]	NPTF

a. The volume of water is approximated.
ICDF = INEEL CERCLA Disposal Facility
NPTF = New Pump and Treat Facility

The debris generated during this project consisted of piping, flanges, pumps, valves, sized tank pieces, various metal pieces, poly tubing, wiring, personal protective equipment, plastic, and other small debris items. The debris was containerized into seven 20-yd^3 roll-off metal containers. The debris was characterized as mixed low-level waste. Based on an evaluation of analytical data, process knowledge, and the potential for organic contamination still associated with these items, the waste was determined to meet land disposal restriction treatment standards and was direct disposed of at the INEEL CERCLA Disposal Facility (ICDF) in August 2004 (Appendix C). In addition to the roll-offs, debris also was packaged in one of the sized tank pieces and disposed of at the ICDF in September 2004 (Appendix C).

A mixture of scale and sludge was found in the bottom of GWTF Tanks T-1, T-2, and T-3 (Figure 3). Each of these tanks was cut horizontally and then heat was applied to them to thaw and melt ice that had accumulated in the bottom. Once the ice had melted, the residual water was pumped out of the tanks into a temporary poly tank and reprocessed through the NPTF. Absorbent was added to the remaining sludge to absorb any free liquids. The sludge was then transferred to containers and temporarily accumulated until sample analysis results were available. Based on results of the analysis, the sludge material was characterized as mixed low-level waste with TCE concentrations below the land disposal restriction treatment standard. This material was direct disposed of at the ICDF in August 2004 (Appendix C).

Ion exchange resin was frozen with rinse water inside various pieces of piping. To remove the resin, the piping was placed in secondary containment and heated to melt the ice. Once the ice had melted, the water was pumped out of the containment and reprocessed through the NPTF. The resin was containerized and temporarily accumulated until the waste profile could be completed and the waste receipt scheduled at the ICDF. The resin material was characterized as mixed low-level waste and disposed of at the ICDF in August 2004 (Appendix C). All water that was generated from the flushing of the treatment system components was containerized and processed through the NPTF.

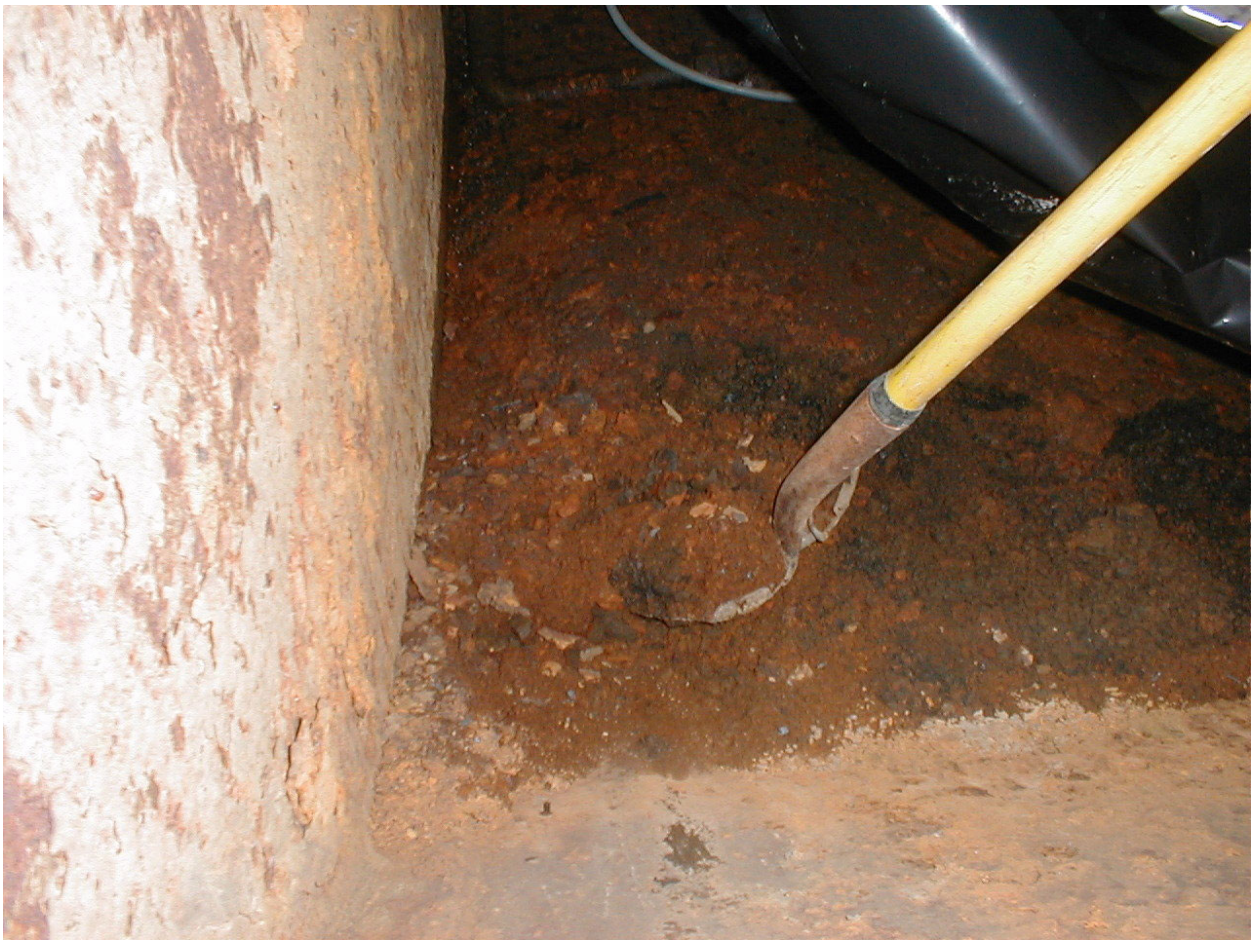

Figure 3. Sludge and scale being removed from the holding tank.

Table 2 lists the GWTF components identified in the D&D Plan for the GWTF (INEEL 2003) and identifies the disposition of each item. The generated waste was considered to be "non standard other-debris like materials" in accordance with the *ICDF Waste Acceptance Criteria* (DOE-ID 2003b). There were four different waste configurations disposed of into the ICDF landfill. The four configurations are as follows:

- Sized
- tank and tank contents
- Roll-off containers
- Wooden boxes

Miscellaneous equipment and other components. The sized tank consists of a 20,000-gal tank (10 × 34 ft) filled with GWTF debris and miscellaneous items. The covered sized tank was delivered to the ICDF on a flatbed truck and placed directly into the ICDF. The sized tank was then grouted to fill as much void space as possible. Seven roll-off containers with miscellaneous piping and facility components were also transported to the ICDF for disposal. The roll-off containers were placed into the ICDF cell and the containers were filled with grout to fill as much void space as possible. The wooden boxes (eight boxes 4 × 4 × 8 ft each), containing sized steel piping, were set in the ICDF and filled with grout to fill as

much void space as possible. Miscellaneous equipment (three carbon filter beds) were sent to the ICDF and grouted in "as is." The total estimated volume of waste sent to the ICDF for disposal was 165 yd^3, with a total weight of approximately 204,000 lb.

Table 2. Groundwater Treatment Facility components.

Component	GWTF Equipment Number	Disposition
Blower	F-1	Roll-off containers–ICDF
Air influent piping	From F-1 to ST-1	Roll-off containers–ICDF
Resin hopper	RH-1	Roll-off containers–ICDF
Sprung structure	No Designation	Transferred to V-tank project
System piping, 1" SW	No Designation	Roll-off containers–ICDF
System piping, 1" DW	No Designation	Wooden box
System piping, 1-1/2" SW	No Designation	Roll-off containers–ICDF
System piping, 2" SW	No Designation	Roll-off containers–ICDF
System piping, 2" DW	No Designation	Wooden box
System piping, 3" SW	No Designation	Roll-off/wooden box
Air exhaust piping, 6"	No Designation	Wooden box
Activated carbon bed	ACC-1	Direct disposal to ICDF
Activated carbon bed	ACC-2	Direct disposal to ICDF
Activated carbon bed	ACC-3	Direct disposal to ICDF
Air heater	H-1	Roll-off containers–ICDF
Sea-land containers	C-1, C-2, C-3, C-4	Sent to excess for future use
Surge tank	T-1	Covered tank–ICDF
Pump	P-2	Roll-off containers–ICDF
Cyclone separator	FL-7	Roll-off containers–ICDF
Bag filters	FL-3, FL-4, FL-5, FL-6	Roll-off containers–ICDF
Scale pretreatment System	EP-1	Roll-off containers–ICDF
Air stripper	ST-1	Roll-off containers–ICDF
Auxiliary sump	ST-2	Roll-off containers–ICDF
Ion exchange column	IEXP-1	Roll-off containers–ICDF
Ion exchange column	IEXP-2	Roll-off containers–ICDF
Verification tank	T-2	T-1 tank disposal–ICDF
Verification pump	P-4	Roll-off containers–ICDF
Auxiliary sump sludge	No Designation	Roll-off containers–ICDF

Table 2. (continued).

Component	GWTF Equipment Number	Disposition
Pump	P-3	Roll-off containers–ICDF
Multimedia filter	FL-1	Roll-off containers–ICDF
Pump	P-6	Roll-off containers–ICDF
Backwash bag filter	FL-2	Roll-off containers–ICDF
Cleanup system tank	T-3	T-1 tank disposal–ICDF
Pump	P-5	Roll-off containers–ICDF
Note: SW = single-wall (piping) DW = double-wall (piping)		

6. FINAL SITE CONDITION

All GWTF process tanks, piping, and components have been removed from the site. There is no GWTF-related equipment or debris remaining inside or outside the Sprung® structure. Because there was no knowledge or visual evidence of leaks or spills that could have contaminated the underlying soil, confirmatory sampling was not required in accordance with the D&D Plan (INEEL 2003). The Sprung® structure itself will be relocated to support OU 1-10 field activities at TAN. Figures 4 and 5 illustrate the final condition of the GWTF.

Figure 4. Final site conditions inside the Groundwater Treatment Facility after decontamination and dismantlement activities.

Figure 5. Final site conditions outside the Groundwater Treatment Facility after decontamination and dismantlement activities.

7. CONCLUSION

All activities identified in the Remedial Action Work Plan (DOE-ID 2003a) and D&D Plan (INEEL 2003) were successfully completed. The air stripper sump, auxiliary sump, multimedia filter, and cleanup system tank were disassembled, thoroughly cleaned, and properly disposed of. All interior mechanical electrical lighting, fire protection, process pipes, tanks, sumps, heating and ventilation systems, laboratory equipment, and other associated equipment were emptied, rinsed, and properly disposed of. Radiological screening was performed to ensure that all debris met applicable release limits. Based on a review of the GWTF operation reports and daily inspection logs, along with process knowledge, there is no knowledge or evidence of any spills or leaks that contaminated the underlying soil. The Sprung® structure has been transferred to the OU 1-10 project and will be relocated for continued use. All applicable closure requirements under the Remedial Action Work Plan and D&D Plan have been met. Based on the information presented in this report, the former GWTF area is no longer considered a CERCLA area.

8. REFERENCES

42 USC § 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund)," *United States Code,* December 11, 1980.

DOE-ID, 1995, *Record of Decision Declaration for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites Final Remedial Action, Operable Unit 1-07B, Waste Area Group 1,* Document No. 10139, U.S. Department of Energy Idaho Operations Office, August 1995.

DOE-ID, 2001, *Record of Decision Amendment Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites, Final Remedial Action,* DOE/ID-10139 Amendment, Rev. 0, U.S. Department of Energy Idaho Operations Office, September 2001.

DOE-ID, 2003a, *New Pump and Treat Facility Remedial Action Work Plan for Test Area North Final Groundwater Remediation, Operable Unit 1-07B,* DOE/ID-10679, Rev. 1, U.S. Department of Energy Idaho Operations Office, September 2003.

DOE-ID, 2003b, *ICDF Complex Waste Acceptance Criteria,* DOE/ID-10881, Rev. 1, U.S. Department of Energy Idaho Operations Office, July 2003.

INEEL, 2003, *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility,* INEEL/EXT-03-00286, Rev. 0, Idaho National Engineering and Environmental Laboratory, September 2003.

Appendix A

2004 Decontamination and Dismantlement Activities at the TAN-1748 Groundwater Treatment Facility

Appendix A

2004 Decontamination and Dismantlement Activities at the TAN-1748 Groundwater Treatment Facility

A-1. INTRODUCTION

This appendix provides a narrative of the decontamination and dismantlement (D&D) activities that were performed to close the Groundwater Treatment Facility (GWTF), Building 1748, at Test Area North (TAN) at the Idaho National Engineering and Environmental Laboratory (INEEL).

A-2. Decontamination and Dismantlement Activities

This section describes the activities that were completed for project management (Section 2.1), project preparation (Section 2.2), site preparation (Section 2.3), removal of equipment and structures (Section 2.4), and site cleanup and demobilization (Section 2.5).

A-2.1 Project Management

The management/engineering for the TAN-1748 D&D project was performed by the Inactive Sites Project under the Idaho Completion Project (ICP) directorate at the INEEL. The management planning and control approach was identified in Section 4 of the *Decontamination and Dismantlement Plan for the Groundwater Treatment Facility* (INEEL 2003).

The Inactive Sites project manager was responsible for the overall direction of the D&D program at the INEEL. Engineering support was coordinated by the Inactive Sites project engineer with delegated responsibility provided by the TAN-1748 D&D task lead. Support for field activities was coordinated by the D&D field operations lead with delegated responsibility provided by the TAN-1748 field team leader (FTL).

The TAN-1748 D&D task lead was responsible for management and planning of all D&D work at the task site to ensure completion of the project within budget, on schedule, and in compliance with all safety and environmental regulations. The D&D task lead coordinated all document preparation, including planning, cost estimating, scheduling, and dealing with environmental and safety concerns. The D&D task lead also was responsible for tracking and reporting the progress and status of the project.

The TAN-1748 FTL was responsible for the safe and successful completion of the project by managing field operations and executing the work plan. The FTL was responsible for establishing and enforcing task site controls, documenting site activities, and conducting daily safety briefings. The FTL maintained the FTL logbook and site attendance log. The FTL supervised task site personnel, including crafts support assigned to the job. The FTL also interfaced with the field support organization, including the assigned industrial hygienist, safety engineer, fire protection engineer, radiological control support personnel, environmental support personnel, and Waste Generator Services personnel to accomplish the work activities.

Analyses of samples collected for characterization were performed by off-Site laboratories. The off-Site and on-Site Radioactive Materials Laboratory was used for radiological sample analysis. Detailed cost estimates and schedules were completed at the beginning of the project. The TAN-1748 D&D task

lead was responsible for monitoring the actual costs and work performance as they compared to the planned estimate and schedule.

All work was performed in accordance with INEEL requirements and procedures, as outlined in the D&D Plan (INEEL 2003) and in task-specific work orders (WOs) prepared in compliance with INEEL work control requirements, including Standard (STD) -101, "Integrated Work Control Process." In addition, safe work permits, job safety analyses, and radiological work permits were prepared to provide additional requirements and procedures for specific tasks. Project documentation (including the D&D Plan, hazard analysis, and the environmental checklist) was prepared and approved in accordance with the appropriate INEEL and ICP procedures and policies.

A-2.2 Project Preparation

Before D&D operations at TAN-1748 could proceed, numerous planning and preparation documents and determinations were required. The following sections describe the preparation documents that were completed before field work was initiated.

A-2.2.1 Davis-Bacon Determination

In compliance with Management Control Procedure (MCP) -2874, "Davis-Bacon Applicability Review Process," INEEL Form 431.38, "INEEL Davis-Bacon Committee Case Record," was submitted for a Davis-Bacon determination on the projected work scope for the TAN-1748 project (see Decision No. 03-109). The Davis-Bacon ruling determined that the TAN-1748 D&D project was noncovered work.

A-2.2.2 Decontamination and Dismantlement Plan

The D&D Plan (INEEL 2003) identified specific project tasks and requirements for all D&D activities at the project site, outlined the general work scope and project objectives, and served as the primary project management plan. The D&D Plan contained specific requirements to carry out the work scope as well as project health and safety requirements.

A-2.2.3 Hazard Classification and Safety Documentation

The D&D activity at TAN-1748 was designated as "not requiring additional safety analysis." Work was performed with no additional safety documentation required, beyond company procedures, in accordance with MCP-2451, "Safety Analysis for Other Than Nuclear Facilities." The controls to mitigate work hazards will be implemented through the use of WOs, radiological work permits, and other procedures and documentation that have been reviewed by qualified safety and health personnel. The project WOs and procedures will provide mitigation requirements for the project's hazards and risks.

Work by craft personnel was performed in accordance with STD-101, which provides the requirements for the Integrated Work Control Process (IWCP) at the INEEL. The IWCP is the method by which the Integrated Safety Management System and Voluntary Protection Program are implemented for maintenance and for construction projects. The IWCP establishes the process by which all maintenance work and project WOs for construction, deactivation, decontamination, decommissioning, and ICP work is screened consistently to uniform criteria to ensure that hazards are appropriately identified, analyzed, and controlled (see PLN-1053, "Deactivation, Decontamination, and Decommissioning Project Manager's Handbook"). Work packages were written containing specific health and safety requirements. Safety personnel reviewed WOs, task documentation, procedures, and subcontracts to ensure that INEEL and Occupational Safety and Health Administration guidelines were properly incorporated. All D&D activities were conducted in accordance with prescribed safety procedures. In addition, safety personnel provided input and control through the approval of safe work permits. Radiological control support

personnel controlled all work performed in radiologically contaminated work areas and verified that all radiological control rules and guidelines were followed.

A-2.2.4 National Environmental Policy Act Documentation

In compliance with the requirements of the National Environmental Policy Act (42 USC § 4321 et seq.), an environmental checklist (INEEL Form 451.01) was prepared and approved for the TAN-1748 project (Environmental Checklist Document No. TAN-03-003). The proposed action qualified as a categorical exclusion under the National Environmental Policy Act.

A-2.2.5 State Historic Preservation Document

Because TAN-1748 was not eligible for nomination to the National Register of Historic Places, a cultural/historic resources waiver was obtained before work began on TAN-1748.

A-2.2.6 Work Orders

Each of the tasks performed at TAN-1748 was accomplished using approved WOs prepared in accordance with the requirements of STD-101. The WOs defined the work, required reviews, the job steps and the required actions to mitigate potential hazards and access control interface requirements. Safety, environmental support, facility engineer, industrial hygiene, and radiological control support personnel—as well as the TAN-1748 D&D task lead, construction coordinator, and the facility manager—reviewed and approved the WOs as required.

Work performed at the task site included preparation of the following WOs:

- Minor Maintenance WO#-40509—to remove the Emergency Notification System speaker
- Planned WO#-74816—to remove interior equipment and components.

A-2.2.7 Field Sampling Plan

Waste Generator Services generated a Field Sampling Plan as a guide for the collection of samples for laboratory analyses to use in material and waste characterization and disposal. The Field Sampling Plan provided guidance for obtaining representative, technically defensible data and maintaining sample integrity. Characterization efforts were performed by Waste Generator Services under Plan ESP-043-04.

A-2.3 Site Preparation

Before removal activities were performed inside TAN-1748, D&D personnel set up the task site and mobilized equipment to perform the work. The work zone was set up using rope barriers and signs stating access requirements. No personnel were allowed inside the task site boundaries without first signing the attendance roster and wearing the appropriate personal protective equipment based on the expected hazards to be encountered. Original copies of the attendance roster were placed in the project data file to be archived.

Mitigation of biological hazards was implemented to protect the safety and health of workers during D&D activities that would disturb areas of rodent droppings. Mitigation included the spraying of bleach solution for rodent droppings and removal of rodent carcasses for possible hantavirus. The support of radiological control technicians on the TAN-1748 D&D project was instrumental in identifying contaminated conditions and contaminated areas during routine surveys. During the course of the project,

a number of areas and pieces of equipment within the facility (i.e., interior of the three holding tanks and process piping) were surveyed and determined to contain radiological contamination.

A-2.4 Removal of Equipment and Structures

Before removing any systems or equipment from the structure, workers verified that the equipment had been appropriately isolated and de-energized according to INEEL requirements and procedures.

The items removed and disposed of included:

- Interior mechanical and electrical equipment
- Lighting
- Fire protection and alarm systems
- Accessible utility piping and equipment
- Process piping inside the cargo containers.

The holding tanks and associated piping were sized and disposed of according to INEEL requirements and procedures. The 20,000-gal tank was cut in half (horizontally) and used as a container for sized tank pieces and other debris. The sea-land cargo containers were transferred to the Central Facilities Area to be reused, if possible.

A-2.5 Site Cleanup and Demobilization

The management of waste generated during D&D operations was briefly discussed in the previous sections. Waste determination and disposition forms (Form 435.39) were prepared for all waste generated. Waste determination involved characterizing, removing, packaging, and transporting the waste to an appropriate disposal site in accordance with INEEL procedures and requirements. Waste Generator Services supported the completion of waste stream removal and disposal.

The original work scope of the D&D Plan (INEEL 2003) identified the removal of the treatment facility and the Sprung® structure. However, the end state was changed to leave the Sprung® structure intact to support ongoing Operable Unit (OU) 1-10 activities at TAN. Final project documentation has been completed, including this narrative and preparation of the final D&D project data files and photos for inclusion in the ICP optical imaging system for permanent record storage.

A-3. CONCLUSION

The TAN-1748 process tanks, piping, and components have been removed and containerized for proper disposal at the INEEL Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF). The Sprung® structure is intact and will be transferred to the OU 1-10 project for reuse. A project data package containing all project reports, work orders, procedures, and other documentation has been submitted to the INEEL ICP Administrative Record and Document Control for storage. The D&D project site photography was performed by project personnel. All photos will be retained as part of the project file.

During the project, exposures to personnel from radiological and chemical hazards were minimized through the implementation of engineering and administrative controls, the use of personal protective

equipment, and personnel monitoring. The actual total project exposure was equal to 0 mR. No exposures in excess of applicable permissible exposure limits for any hazardous chemicals or materials resulted from D&D operations. No exposures in excess of the applicable action limits were detected. All field activities were completed ahead of schedule and under budget.

A-4. REFERENCES

42 USC § 4321 et seq., 1970, "National Environmental Policy Act of 1969," *United States Code*, January 1, 1970.

Form 431.38, 1999, "INEEL Davis-Bacon Committee Case Record," Rev. 2, Idaho National Engineering and Environmental Laboratory, October 1999.

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